Assignment -1

Python Programming

Assignment Date	17 September 2022
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Maximum Marks	2 Marks

Question-1:

Make a smart home in tinkercad using 2 sensors,LED,Buzzer in single code and circuit.

Solution:

```
#include<Servo.h>

const int pingPin = 7;

int servoPin = 8


Servo servo1;
void setup() {

  // initialize serial communication:

  Serial.begin(9600);

  servo1.attach(servoPin);

  pinMode(2,INPUT);

  pinMode(4,OUTPUT);

  pinMode(11,OUTPUT);

  pinMode(12,OUTPUT);

  pinMode(13,OUTPUT);

  pinMode(A0,INPUT);

  digitalWrite(2,LOW);

  digitalWrite(11,HIGH);


}
void loop() {
  long duration, inches, cm;
```

```
pinMode(pingPin, OUTPUT);
digitalWrite(pingPin, LOW);
delayMicroseconds(2);
digitalWrite(pingPin, HIGH);
delayMicroseconds(5);
digitalWrite(pingPin, LOW);
   pinMode(pingPin, INPUT);
   duration = pulseIn(pingPin, HIGH);

   // convert the time into a distance
   inches = microsecondsToInches(duration);
   cm = microsecondsToCentimeters(duration);

   servo1.write(0);
   if(cm < 40)
   {
    servo1.write(90);
    delay(2000);
   }
   else
   {
    servo1.write(0);
   }
```

```
// PIR with LED starts int
pir = digitalRead(2);

   if(pir == HIGH)
   {
    digitalWrite(4,HIGH);
    delay(1000);
   }
   else if(pir == LOW)
   {
    digitalWrite(4,LOW);
   }

   //temp with fan
   float value=analogRead(A0);
   float temperature=value*0.48;

   Serial.println("temperature");
   Serial.println(temperature);

   if(temperature > 20)
   {
    digitalWrite(12,HIGH);
    digitalWrite(13,LOW);
   }
   else
   {
    digitalWrite(12,LOW);
    digitalWrite(13,LOW);
```

```
  }
}

long microsecondsToInches(long
  microseconds) {return microseconds / 74 / 2;
}

long microsecondsToCentimeters(long
  microseconds) {return microseconds / 29 / 2;
}
```

Output: